



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
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ATLANTA, GEORGIA 30303-1200

August 12, 2021

Mr. Michael Yox
Regulatory Affairs Director
Southern Nuclear Operating Company
7825 River Road, BIN 63031
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SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INITIAL TEST
PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED INSPECTION
REPORTS 05200025/2021004, 05200026/2021004

Dear Mr. Yox:

On June 30, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant, Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on July 26, 2021 with Mr. Glen Chick, Vogtle 3 & 4 Executive Vice President, and other licensee and contractor staff members.

The inspection examined a sample of construction, testing, and operational programs activities conducted under your Combined License (COL) as it relates to safety and compliance with the Commission's rules and regulations and with the conditions of these documents. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

NRC inspectors documented three findings of very low safety significance (Green) in this report. Two of these findings involved a violation of NRC requirements. The NRC is treating these two violations as noncited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC resident inspector at the VEGP Units 3 and 4.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC resident inspector at the VEGP Units 3 and 4.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Bradley J. Davis, Chief
Construction Inspection Branch 2
Division of Construction Oversight

Docket Nos.: 5200025, 5200026

License Nos: NPF-91, NPF-92

Enclosure: NRC Inspection Report (IR) 05200025/2021004, 05200026/2021004
w/attachment: Supplemental Information

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M. Yox

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INITIAL
TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED
INSPECTION REPORTS 05200025/2021004, 05200026/2021004
DATED: August 12, 2021

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U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers: 5200025
5200026

License Numbers: NPF-91
NPF-92

Report Numbers: 05200025/2021004
05200026/2021004

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Vogtle Units 3 & 4 Combined License

Location: Waynesboro, GA

Inspection Dates: April 1, 2021 through June 30, 2021

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Construction Inspection Branch 2
Division of Construction Oversight

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2021004, 05200026/2021004; 04/01/2021 through 06/30/2021; Vogtle Unit 3 & 4 Combined License, initial test program and operational programs integrated inspection report.

This report covers a 3-month period of announced Inspections, Tests, Analysis, and Inspection Criteria (ITAAC), preoperational test program, startup test program, and operational program inspections by resident and regional inspectors. Three findings were determined to be of very low safety significance (Green) by the inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 2519, "Construction Significance Determination Process." Cross-cutting aspects are determined using IMC 0613, Appendix F, "Construction Cross-Cutting Areas and Aspects." All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy and the temporary enforcement guidance outlined in enforcement guidance memorandum (EGM) 11-006. The NRC's program for overseeing the safe construction of commercial nuclear power reactors is described in IMC 2506, "Construction Reactor Oversight Process General Guidance and Basis Document."

A. NRC-Identified and Self Revealed Findings

Inspection/Testing Cornerstone

(Green) NRC inspectors identified a Green finding and associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," and with an associated Severity Level IV violation of 52.99(c)(1), "ITAAC Closure Notification," for the licensee's failure to demonstrate ITAAC acceptance criteria were satisfied in accordance with procedure ND-RA-001-006, "Development and Approval of ITAAC Submittals (ICN, UIN, PCN)." The licensee also failed to verify that prescribed inspections, tests, and analyses were performed and that the prescribed acceptance criteria were met for ITAAC C.2.6.09.05a in the ITAAC Closure Notification (ICN). Specifically, the licensee failed to verify the functionality of the active vehicle barriers. The licensee entered this issue into its corrective action program as condition report (CR) 50100179 and tested the functionality of the primary active vehicle barrier.

The performance deficiency was of more than minor safety significance and a finding because it is material to the acceptance criteria of the ITAAC, and the performance deficiency prevented the licensee from meeting the ITAAC Design Commitment. The finding was determined to be of very low safety significance because the finding did not impair a design function and the active vehicle barrier function was not required per 10 CFR 73.55 at that time. The inspectors concluded that this finding affected the cross-cutting area of human performance and cross-cutting aspect of Basis for Decisions. Specifically, the licensee failed to verify the entire ITAAC acceptance criteria was met before submitting the ITAAC Closure Notification. [H.10] (Section 1A03)

(Green) A self-revealed construction finding of very low safety significance with an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the licensee's failure to accomplish hot functional testing activities in procedure 3-GEN-ITPP-517, "Precore Hot Functional Test Procedure", Version 4.1 in accordance with NMP-AP-003, "Procedure and Work Instruction Use and Adherence, Version 6.1." The licensee entered this issue into its CAP as CR 50093618, CR 50093597, and CR 50097436.

The performance deficiency was determined to be of more than minor significance because it represents a substantive failure to implement an adequate program, process, procedure, or quality oversight function. Specifically, the licensee failed to perform all steps in sequence, complete each step before moving to the next step, and sign off each step after completing it and before moving to the next step. This caused the RCS pressure to increase above the low temperature overpressure relief valve setpoints. The inspectors concluded that this finding affected the cross-cutting area of human performance and cross-cutting aspect of Challenge the Unknown. Specifically, the licensee did not have a complete understanding of how to properly execute a set of steps in procedure 3-GEN-ITPP-517 and did not seek clarification before proceeding. [H.11] (Section 1P01)

Security Programs for Construction Inspection and Operations Cornerstone

(Green) NRC inspectors identified a construction finding of very low safety significance for the licensee's failure to analyze site specific conditions in accordance with NMP-SE-015, "Target Set Identification, Development, and Maintenances." The licensee entered this issue into its corrective action program as CR 50031962.

The performance deficiency was determined to be of more than minor safety significance because it represented a substantive failure to establish or implement an adequate program, process, procedure, or quality oversight function. The inspectors concluded that this finding affected the cross-cutting area of human performance and cross-cutting aspect of Bases for Decisions. Specifically, the licensee failed to verify its understanding of the requirements for target set identification and development. [H.10] (Section 3P02)

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Testing Status

During this report period for Unit 3, the licensee completed various activities to satisfy aspects of the Vogtle Unit 3 operational programs and initial test program. The licensee performed portions of hot functional testing activities which included testing the reactor coolant system (RCS), residual heat removal system (RNS), passive core cooling system (PXS), main steam system, etc. at elevated temperatures and pressures. While heating the plant and operating equipment, Thermal Expansion Dynamic Effects and Vibration (TEDEV) measurements were taken to ensure piping and components are properly installed and supported such that the expected movement does not result in excessive stress or fatigue. The licensee performed preoperational and component tests of various structures, systems, and components (SSCs) and their control systems, e.g. PMS and PLS. Additionally, the licensee performed testing of air operated valves and motor operated valves; and performed response time testing of RCS resistance temperature detectors.

During this report period for Unit 4, the licensee completed the initial energization milestone by providing permanent power to plant equipment. The licensee began integrated flush activities by flushing portions of chemical and volume control system (CVS) and spent fuel pool system (SFS) and continued with installation of SSCs.

1. CONSTRUCTION REACTOR SAFETY

**Cornerstones: Design/Engineering, Procurement/Fabrication,
Construction/Installation, Inspection/Testing**

Inspection Manual Chapter (IMC) 2503, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) - Related Work Inspections

1A01 (Unit 3) ITAAC Number 2.1.02.11a.ii (47) / Family 10C

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.11a.ii (47). The inspectors used the following Nuclear Regulatory Commission (NRC) inspection procedures (IPs)/sections to perform this inspection:

- 65001.C-02.02 - Construction Test Observation

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test if the remotely operated valves performed their active function after receiving a signal from the protection and safety monitoring system (PMS). Specifically, the tests were observed to verify if they satisfied the applicable quality and technical requirements of the Updated Final Safety Analysis Report (UFSAR) and the ITAAC.

- B-GEN-ITPCE-039-F117;

- B-GEN-ITPCE-039-F118;
- B-GEN-ITPCE-039-F119;
- B-GEN-ITPCE-039-F120;
- B-GEN-ITPCE-039-F121;
- B-GEN-ITPCE-039-F122;
- B-GEN-ITPCE-039-F155;
- B-GEN-ITPCE-039-F156;
- B-GEN-ITPCE-039-F157;
- B-GEN-ITPCE-039-F158;
- B-GEN-ITPCE-039-F159;
- B-GEN-ITPCE-039-F160 ;
- B-GEN-ITPCE-039-F166; and
- B-GEN-ITPCE-039-F167.

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test if the remotely operated valves opened within the required time after receiving a signal from PMS. Specifically, the tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCE-039-F117;
- B-GEN-ITPCE-039-F118;
- B-GEN-ITPCE-039-F119;
- B-GEN-ITPCE-039-F120;
- B-GEN-ITPCE-039-F121;
- B-GEN-ITPCE-039-F122;
- B-GEN-ITPCE-039-F155;
- B-GEN-ITPCE-039-F156;
- B-GEN-ITPCE-039-F157;
- B-GEN-ITPCE-039-F158;
- B-GEN-ITPCE-039-F159; and
- B-GEN-ITPCE-039-F160.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 2.2.01.09 (110) / Family 10A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.09 (110). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C - Inspection of the ITAAC-Related Construction Test Program

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test if the remotely operated valves performed their active function after receiving a signal from PMS. Specifically, the

tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-039-F169;
- B-GEN-ITPCI-039-F181; and
- B-GEN-ITPCI-039-F236.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number C.2.6.09.05a (664) / Family 17A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.05a (664). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.17 – Inspection of ITAAC-related Security Structure, Systems, and Components

NRC inspectors performed an inspection to verify if the protected area primary personnel and vehicle access control points were installed per approved design requirements and the access control points were configured to control personnel and vehicle access per the applicable access control requirements in accordance with NRC regulatory requirements and the licensees security plan and procedures.

The inspectors performed an inspection via walkdown of the protected area primary personnel access control point to verify if personnel were channeled to the designated access control point through which personnel are processed before being granted access to the protected area. The inspectors reviewed the primary personnel access control point to verify if it was designed to ensure the identity and authorization for personnel access can be verified prior to being granted entry into the protected area. Inspectors also reviewed the primary personnel access control point to verify if it was equipped with video surveillance monitoring equipment and could be monitored by security personnel. Lastly, inspectors reviewed the primary personnel access control point to verify if it was equipped with alarmed entry control devices (e.g., doors, gates, turnstiles, card readers, or biometrics) that prevent or delay unauthorized entry into the protected area.

The inspectors reviewed the primary personnel access point to verify if it included a search area containing metal detectors, explosive detectors, and X-Ray devices configured to prevent unauthorized bypass, and was capable of detecting firearms, incendiary devices, and explosives, in accordance with NRC regulatory requirements and the licensees security plan and procedures.

The inspectors observed operational testing of the metal detectors, explosive detectors, and X-Ray equipment to confirm if the detection equipment was functioning and performing within the manufacturer design specifications. The

inspectors sampled all detection equipment to verify if the equipment detected and alarmed as required per NRC regulatory requirements, manufactures specifications and licensee's testing procedures.

The inspectors also reviewed the ITAAC Closure Notification (ICN) and performed a walkdown of the active vehicle barrier to verify if the ITAAC were satisfied.

b. Findings

Introduction

NRC inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," and with an associated Severity Level IV violation of 52.99(c)(1), "ITAAC Closure Notification," for the licensee's failure to demonstrate ITAAC acceptance criteria were satisfied in accordance with procedure ND-RA-001-006, "Development and Approval of ITAAC Submittals (ICN, UIN, PCN)." The licensee also failed to verify that prescribed inspections, tests, and analyses were performed and that the prescribed acceptance criteria were met for ITAAC C.2.6.09.05a in the ICN. Specifically, the licensee failed to verify the functionality of the active vehicle barriers.

Description

On December 21, 2020, the licensee submitted the ICN for ITAAC C.2.6.09.05a to the NRC per the requirements in 10 CFR 52.99. On May 13, 2021, NRC inspectors reviewed the ICN and performed a walkdown of the active vehicle barrier system which include two active vehicle barriers. The inspectors identified that the functionality of the active vehicle barriers were not tested as part of satisfying the acceptance criteria of the ITAAC. The ITAAC specifies that the licensee perform inspections, tests, or a combination of inspections and tests to verify the access control points for the protected area were configured to control personnel and vehicle access. By not testing the functionality of the active vehicle barriers, the licensee failed to demonstrate that the vehicle barriers were configured to control vehicle access as required by the ITAAC.

Subsequent to the NRC inspectors identifying this issue, the licensee entered this issue into its corrective action program as condition report (CR) 50100179 and tested the functionality of the primary and protected area receiving warehouse active vehicle barriers and resubmitted the ICN with this information.

Analysis

The inspectors determined that the failure to follow procedure ND-RA-001-006 to demonstrate the ITAAC acceptance criteria were satisfied prior to submitting the ITAAC Closure Notification was contrary to 10 CFR 50, Appendix B, Criterion V and was a performance deficiency. Per the guidance in IMC 0613, Appendix E, "Examples of Minor Construction Issues," the performance deficiency was determined to be more than minor because it is material to the acceptance criteria of the ITAAC, and the performance deficiency prevented the licensee from meeting the ITAAC Design Commitment. Specifically, the licensee failed to demonstrate that the ITAAC acceptance criteria was satisfied prior to submitting the ICN.

This finding was an ITAAC finding because the performance deficiency is material to ITAAC C.2.6.09.05a. Specifically, the ITA requires the licensee to inspect, test, or use a combination of inspections or tests to verify the access control points for the protected area are configured to control personnel and vehicle access. By not testing the active vehicle barrier, the licensee was not able to verify the protected area was configured to control vehicle access.

The inspectors determined the finding was associated with the Inspection/Testing Cornerstone and assessed the finding in accordance with IMC 2519, "Construction Significance Determination Process," Appendix A, "AP1000 Construction Significance Determination Process," Section 4. The inspectors determined this finding was of very low safety significance because the finding did not impair a design function and the active vehicle barrier function was not required per 10 CFR 73.55 at that time.

In accordance with IMC 0613 Appendix F, "Construction Cross-Cutting Areas and Aspects," the inspectors determined the finding had a cross-cutting aspect of H.10, Basis for Decisions, in the area of Human Performance. Specifically, the licensee failed to verify the entire ITAAC acceptance criteria was met before submitting the ICN.

In addition, the Construction Reactor Oversight Process' significance determination process does not specifically consider the regulatory process impact in its assessment of licensee performance. Therefore, it is necessary to address this violation which impedes the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance.

The inspectors determined that the failure to provide sufficient information within the ICN to demonstrate that the prescribed inspections, tests, and analyses have been performed and the prescribed acceptance criteria were met was a violation of 10 CFR 52.99(c)(1). In accordance with Section 6.5 of the NRC Enforcement Policy, the inspectors determined this was a SL IV violation because the licensee failed to establish, maintain, or implement adequate controls over testing processes that were important to safety. Specifically, the licensee failed to perform the testing of the vehicle barriers to meet the acceptance criteria.

Enforcement

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings and shall be accomplished in accordance with these instructions, procedures, or drawings.

Contrary to the above, since December 21, 2020, the licensee failed to follow procedure ND-RA-001-006 and demonstrate that the ITAAC acceptance criteria were satisfied in its ITAAC Closure Notification. Specifically, the licensee failed to demonstrate that the ITAAC acceptance criteria for the active vehicle barriers were met.

10 CFR 52.99(c)(1), "ITAAC Closure Notification," requires, in part, that ITAAC closure notification must contain sufficient information to demonstrate that the prescribed

inspections, tests, and analyses have been performed and that the prescribed acceptance criteria were met.

Contrary to the above, since December 21, 2020, the ICN submitted failed to contain sufficient information to demonstrate that the prescribed inspections, tests, and analyses that verify the prescribed acceptance criteria were met. Specifically, the licensee failed to demonstrate the functionality of the active vehicle barriers.

The licensee entered this issue into their corrective action program as CR 50100179 and tested the functionality of the primary and protected area receiving warehouse active vehicle barriers and resubmitted the ICN with this information. This issue does not represent an immediate safety concern because the licensee was not required to meet 10 CFR 73.55, "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage," at the time of the inspection.

Because this violation was not repetitive or willful, and was entered into the licensee's CAP, this violation is being treated as a non-cited violation consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200025/2021004-01, Failure to Prescribe Instructions or Procedures for ITAAC activities that Affect Quality).

1A04 (Unit 3) ITAAC Number C.2.6.09.06 (666) / Family 17A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.06 (666). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.17 – Inspection of ITAAC-related Security Structure, Systems, and Components

NRC inspectors performed an inspection of the access control system to verify if the system was installed to allow individuals with authorized access to the protected area and vital areas without escort in accordance with NRC regulations and SNC's security plan. The inspectors reviewed the access control system to verify if it required a numbered picture badge with the right access level to enter the protected and vital areas. The inspectors reviewed the licensee's acceptance testing documentation of the hand geometry and keycard reader systems to verify if the systems installed and functioned as designed. The inspectors reviewed system procedures to verify if the systems will be maintained in accordance with the manufacturer's specifications. The inspectors observed testing of several of the hand geometry units in the primary access portal and vital area doors to verify if the units and keycard readers operated as designed.

b. Findings

No findings were identified.

1A05 (Unit 4) ITAAC Number C.2.6.09.08a (668) / Family 17A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number C.2.6.09.08a (668). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.17 – Inspection of ITAAC-related Security Structure, Systems, and Components

The inspectors performed an inspection to determine if the openings in Vogtle Unit 4 vital area barriers for heating, ventilation, and cooling (HVAC) system vents were secured to prevent exploitation of the openings to satisfy the ITAAC and 10 CFR 73.55(e)(4).

The inspectors reviewed the design specifications and associated drawings to identify designated HVAC system openings through vital area barriers and the way they will be secured and monitored. The inspectors examined the physical installation of one HVAC system opening (SV4-VAS-AS-01) to the vital area during this inspection period. The inspectors performed direct observation inspection of the opening to determine if it was secured in a manner that would delay or prevent exploitation. Specifically, the inspectors directly inspected the barrier, locking mechanisms, welds, and bolts associated with the opening.

b. Findings

No findings were identified.

IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs

1P01 Construction Quality Assurance (QA) Criterion 16

- 35007-A16 - Appendix 16. Inspection of Criterion XVI – Corrective Action

a. Inspection Scope

The inspectors conducted daily reviews of issues entered into the licensee's corrective action program (CAP) to assess issues that might warrant additional follow-up inspection, to assess repetitive or long-term issues, to assess adverse performance trends, and to ensure the CAP appropriately included regulatory required non-safety related SSCs. The inspectors periodically attended the licensee's CAP review meetings, held discussions with licensee and contractor personnel, and performed reviews of CAP activities during the conduct of other baseline inspection procedures.

The inspectors reviewed conditions entered into the licensee's CAP to determine whether the issues were classified in accordance with the licensee's QA program and CAP implementing procedures. The inspectors reviewed corrective actions associated with conditions entered into the CAP to determine whether appropriate actions to correct the issues were identified and implemented effectively, including immediate or short-term corrective actions, in accordance with the applicable QA program

requirements and 10 CFR 50, Appendix B, Criterion XVI. Additionally, the inspectors reviewed the corrective actions taken to determine whether they were commensurate with the significance of the associated conditions in accordance with the licensee's CAP implementing procedures. The inspectors completed reviews of CAP entry logs to verify issues from all aspects of the project, including equipment, human performance, and program issues, were being identified by the licensee and associated contractors at an appropriate threshold and entered into the CAP as required by licensee's CAP implementing procedures. The inspectors performed a focused review on the following condition reports:

- CR 50093597;
- CR 50093618; and
- CR 50097436.

b. Findings

Introduction

A self-revealed construction finding of very low safety significance (Green) with an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the licensee's failure to accomplish hot functional testing activities in procedure 3-GEN-ITPP-517, "Precore Hot Functional Test Procedure", Version 4.1 in accordance with NMP-AP-003, "Procedure and Work Instruction Use and Adherence, Version 6.1."

Description

On May 22, 2021, the plant was in a water solid condition and operators were establishing plant conditions to support performance of chemical volume and control system dynamic effects testing per 3-GEN-ITPP-517. This procedure was designated as a continuous use procedure. SNC corporate procedure NMP-AP-003, Section 4.3, specifies, in part, that for a continuous use procedure operators perform all steps in sequence, complete each step before moving to the next step, and sign off each step after completing it and before moving to the next step.

During the performance of procedure 3-GEN-ITPP-517, operators performed Step 4.3.10 to isolate normal RNS purification before completing Step 4.3.7 to establish purification flow from the reactor coolant pumps (RCPs) to CVS. As a result of performing these steps out of sequence, letdown was inadvertently isolated while makeup remained in service. The RCPs automatically tripped due to low letdown line pressure which caused the reactor coolant system pressure to increase above the low temperature overpressure relief valve setpoints. Subsequent to the low temperature overpressure relief valves lifting, the licensee restored letdown and reduced RCS pressure. The licensee entered this issue into its CAP as CR 50093618, CR 50093597, and CR 50097436.

Analysis

The inspectors determined the failure to accomplish hot functional testing activities in procedure 3-GEN-ITPP-517 in accordance with procedure NMP-AP-003 was contrary to 10 CFR 50, Appendix B, Criterion V and was a performance deficiency. The

performance deficiency was determined to be of more than minor significance because it represented a substantive failure to implement an adequate program, process, procedure, or quality oversight function. Specifically, the licensee failed to perform all steps in sequence, complete each step before moving to the next step, and sign off each step after completing it and before moving to the next step. This caused the RCS pressure to increase above the low temperature overpressure relief valve setpoints.

The inspectors concluded the finding was associated with the Inspection/Testing Cornerstone and assessed the finding in accordance with IMC 2519, "Construction Significance Determination Process," Appendix A, "AP 1000 Construction Significance Determination Process," Section 4. The inspectors determined the finding was associated with the RCS and was of very low safety significance (Green) because the event did not impair a design function of the RCS.

The performance deficiency did not impact an ITAAC, thus it was determined to be a construction finding.

In accordance with IMC 0613 Appendix F, Construction Cross-Cutting Areas and Aspects," the inspectors determined the finding had a cross-cutting aspect of H.11, Challenge the Unknown, in the area of Human Performance. Specifically, the licensee did not have a complete understanding of how to properly execute a set of steps in procedure 3-GEN-ITPP-517 and did not seek clarification before proceeding.

Enforcement

10 CFR 50, Appendix B, Criterion V, states in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

Contrary to the above, on May 22, 2021, the licensee failed to follow procedure NMP-AP-003 when performing hot functional testing activities in procedure 3-GEN-ITPP-517. Specifically, when performing 3-GEN-ITPP-517, the licensee failed to perform all steps in sequence, complete each step before moving to the next step, and sign off each step after completing it and before moving to the next step. The licensee entered this issue into its CAP as CR 50093618, CR 50093597, and CR 50097436. Corrective actions were planned and this finding does not present an immediate safety concern because the system responded as designed to the loss of letdown and no safety limit was exceeded.

Because this violation was not repetitive or willful, was of very low safety significance (Green), and was entered into the licensee's corrective action program, this violation is being treated as a NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy (NCV 05200025/2021004-02, Failure to Follow Procedure 3-GEN-ITPP-517).

1P02 Pre-operational Testing

- 70702-02.04 - Test Witnessing

a. Inspection Scope

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure used to test the adequacy of RCS resistance temperature detectors time response testing to verify that the protection channels sensors meet time limits specified in the Technical Specifications. Specifically, the test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR.

- 3-PMS-OTS-17-002

b. Findings

No findings were identified.

3. OPERATIONAL READINESS

Cornerstones: Operational Programs

IMC 2503, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) - Related Work Inspections

3T01 (Unit 3) ITAAC Number 2.1.02.08b (30) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.08b (30). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure used to test the adequacy of RCP rotating inertia that provided RCS flow coast down on loss of power to the RCPs. Specifically, the test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-RCS-ITPP-506

b. Findings

No findings were identified.

3T02 (Unit 3) ITAAC Number 2.1.02.09a (41) / Family 14D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.09a (41). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure used to test the adequacy of RCS flow rates to remove heat from the core. Specifically, the test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 3-RCS-ITPP-506

b. Findings

No findings were identified.

3T03 (Unit 3) ITAAC Number 2.1.02.13b (64) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.02.13b (64). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test whether the RCPs tripped after receiving a signal from PMS. Specifically, the tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-039-F026;
- B-GEN-ITPCI-039-F027;
- B-GEN-ITPCI-039-F028; and
- B-GEN-ITPCI-039-F032.

The inspectors also used appropriate portions of the IP to review the test results that verified the RCPs tripped after receiving a signal from PMS. Specifically, the test results were reviewed to determine whether they contained sufficient information to meet the requirements of the UFSAR and ITAAC acceptance criteria.

b. Findings

No findings were identified.

3T04 (Unit 3) ITAAC Number 2.2.01.11b (118) / Family 07D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.11b (118). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures used to test if after a loss of motive power the motor operated valves assume the loss of motive power position. Specifically, the tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-039-F236; and
- B-GEN-ITPCI-039-F244.

b. Findings

No findings were identified.

3T05 (Unit 3) ITAAC Number 2.2.03.10 (206) / Family 10A

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.10 (206). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.02 – Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure used to verify if the valve performed its active safety function within 20 seconds after an actuation signal from the PMS. Specifically, the test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-039-F079

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure used to verify if the valve performed its active safety function after an actuation signal from the PMS. Specifically, the test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- B-GEN-ITPCI-039-F116

b. Findings

No findings were identified.

IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs

3P01 Preservice Testing

- 73758-App A.02.01 Functional Design and Qualification
- 73758-App B Implementation of Functional Design and Qualification for Pumps, Valves, and Dynamic Restraints

a. Inspection Scope

Functional Design and Qualification

The inspectors performed the following activities related to the development and implementation of the Functional Design and Qualification Program for pumps, valves, and dynamic restraints that will perform safety-related functions at Vogtle Units 3 & 4:

- The inspectors reviewed motor-operated valve (MOV) application reports, and other documents, related to the qualification of a sample of motor-operated globe valves at Vogtle Units 3 & 4 during the 2021 second quarter inspection. Application reports and related documents for a sample of motor-operated gate valves were reviewed during the 2021 first quarter inspection (IRs 05200025/2021002 and 05200026/2021002). The inspectors discussed the MOV qualification activities described in these documents with licensee staff and contractors. On this basis, the inspectors determined that the licensee satisfied the design specification provisions for implementing ASME Standard QME-1-2007, which the NRC accepted in Regulatory Guide 1.100 (Revision 3), for the MOVs listed below:
 - SGS-PL-V027A/B (Steam Generator 1 and 2 PORV Isolation Valves) which are 12" X 10" X 12" Globe Style Isolation Control Valves with Limitorque SB-2-80 Motor Actuators
 - RCS-PL-V002A/B (ADS Stage 2 Control Valves) and RCS-PL-V003A/B (ADS Stage 3 Control Valves) which are Size 8 Class 1530 Globe Valves with Limitorque SB-0-5 (DC) Motor Actuators
- The inspectors reviewed design reports, and other documents (including the verification and validation process for incorporating the Boiling Water Reactor Owners Group Direct Current (DC) Motor Methodology into the Teledyne MIDAS MOV Calculation Software), related to the qualification of a sample of motor-operated gate valves to verify that appropriate justifications were provided for assumptions made in the valve set point data sheet (SPDS), including the assumptions of a 0.58 valve coefficient of friction (COF), the Limitorque SB-00 actuator maximum thrust, the 10% margin tracking method, and thermal binding open thrust factors. Based on the review of MOV documentation and detailed discussions with licensee personnel and contractors, the inspectors determined that the assumptions in the SPDS for the following MOVs are justified:

- PXS-PL-V117A/B (Containment Recirculation Sump A/B to RCS Isolation Valves) which are 8-inch torque-seated flexible wedge gate (FWG) valves with Limitorque SB-00-15 DC Motor Actuators
- RCS-PL-V011A/B (ADS Stage 1 Isolation Valves) which are 4-inch limit-seated FWG valves with Limitorque SB-1-60 DC Motor Actuators
- RCS-PL-V012A/B and V013A/B (ADS Stage 2 and Stage 3 Isolation Valves) which are 8-inch limit-seated FWG valves with Limitorque SB-3-150 DC Motor Actuators
- RNS-PL-V001A/B and V002A/B (RNS Suction from RCS Inner Isolation Valves and RNS Suction from Outer Isolation/IC Containment Isolation Valves) which are 10-inch torque-seated FWG valves with Limitorque SB-3-150 DC Motor Actuators

b. Findings

No findings were identified.

3P02 Physical Security

- 81000.14.02.01 - Review of Events and Logs
- 81000.14-02.02 - Target Set Identification and Development Process Review
- 81000.14-02.03- Verification of Complete and Accurate Target Sets
- 81000.14-02.04 – Cyber Security
- 81000.14-02.05 – Review of Configuration Changes
- 81000.14-02.06 - Physical Protection Program Review

a. Inspection Scope

The inspector performed the first week of this inspection in October 2019 (ADAMS Accession No. ML20044C867). During the second week of the inspection, the inspector performed an inspection of the licensee's target set procedures and identified target sets for Unit 3. The inspector reviewed documents, interviewed staff that provided input to target set development, performed walk downs of target set equipment to verify completeness and accuracy of the target sets, and reviewed corrective actions related to target sets.

The inspector reviewed the following (specific documents are listed under the documents reviewed) to verify the above:

- target set implementation and maintenance;
- AP1000 fault tree target set analysis;
- transition to operations user's guide; and
- cyber security assessment plan, B-GEN-CSEC-003- Attachment 4.

Safety/Security Interface,

- abnormal and emergency operating procedures;
- safety/security interface procedure;
- target set identification and grouping; and
- one-line diagrams.

In addition, the inspector reviewed an analysis related to how cyber security identified critical digital assets that could control elements are identified and documented in target sets. The inspector performed a walk down of identified target set elements, and in some cases, re-verified target set locations were complete and accurate using a 3-D simulation model of the site.

The inspector also reviewed a sample of procedures to verify that assumptions made in target sets were accurately represented in emergency and abnormal operating procedures. Further, the inspectors reviewed condition reports and technical evaluations of quality records to verify issues affecting target sets were being adequately identified and addressed.

b. Findings

Introduction

The NRC inspectors identified a construction finding of very low safety significance (Green) for the licensee's failure to analyze site specific conditions in accordance with NMP-SE-015, "Target Set Identification, Development, and Maintenances."

Description

In October 2019, during the first target set inspection week, the NRC inspectors questioned if the licensee performed their analysis of target sets in accordance with NMP-SE-015, "Target Set Identification, Development, and Maintenances." The licensee created CR 50031962 dated October 17, 2019, and as a result, performed an analysis, DCP-SV0-000461, dated January 8, 2020. Based on the analysis, the licensee identified and implemented changes to their target sets. The inspectors determined that all steps of the procedure were not performed. By not analyzing the specific conditions required by the procedure, the licensee failed to demonstrate that target sets were in accordance with their program requirements.

Analysis

The inspectors determined that the failure to analyze specific conditions was contrary to NMP-SE-015, "Target Set Identification, Development, and Maintenances," was a performance deficiency. Per the guidance in IMC 0613, Appendix E, "Examples of Minor Construction Issues," the performance deficiency was of more than minor safety significance and a finding because it represented a substantive failure to establish or implement an adequate program, process, procedure, or quality oversight function.

The inspectors concluded the finding was associated with the Security Programs for Construction Inspection and Operations Cornerstone and assessed the finding in accordance with the Target Set Significance Determination Process Flowchart in IMC 0609, "Significance Determination Process," Appendix E, Part 1 "Baseline Security Significance Determination Process for Power Reactors." The inspectors determined the finding was of very low safety significance (Green) because the process for developing target sets was not affected. Specifically, the licensee failed to analyze site specific conditions in accordance with NMP-SE-015.

The performance deficiency did not impact an ITAAC, thus it was determined to be a construction finding.

In accordance with IMC 0613 Appendix F, Construction Cross-Cutting Areas and Aspects,” the inspectors determined the finding had a cross-cutting aspect of H.10, Bases for Decisions, in the area of Human Performance. Specifically, the licensee failed to verify its understanding of the requirements for target set identification and development.

Enforcement

Inspectors did not identify a violation of regulatory requirements associated with this finding. Corrective actions have been performed and this finding does not present an immediate safety concern because 10 CFR 73.55 was not required to be implemented at the time of the inspection (FIN 05200025/2021004-03, Failure to Analyze Target Sets in Accordance with Procedures).

4. OTHER INSPECTION RESULTS

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On July 26, 2021, the inspectors presented the inspection results to Mr. G. Chick, Vogtle 3&4 Executive Vice President, and other licensee and contractor staff members. Proprietary information was reviewed during the inspection period but was not included in the inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensees and Contractor Personnel

E. Riffle, ITP Director
A. Nix, NI Manager
T. Petrak, ITAAC Manager
M. Hickox, Test Support Manager
C. Alexander, Milestone Manager
S. Boyle, Milestone Manager
D. Pagan-Diaz, ITP Turnover. Manager
J. Olsen, NI Supervisor
S. Leighty, SNC Licensing Supervisor
C. Castell, SNC Licensing Engineer
N. Patel, SNC Licensing Engineer
J. Cole, SNC Licensing Engineer
J. Weathersby, SNC Licensing Engineer
C. Main, ITAAC Project Manager
D. Wade, ITAAC Project Manager
B. Macioce, Principle Engineer Digital Testing
R. McKay, ITP Test Engineer
S. Turner, ITP Test Engineer
G. Weaver, ITP Test Engineer
R. Nicoletto, ITP Test Engineer
W. Pipkins, ITP Test Engineer
D. Melton, ITP Test Engineer
R. Espara, ITP Test Engineer
J. Clark, ITP Test Engineer
K. Morgan, ITP Test Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Type</u>	<u>Status</u>	<u>Description</u>
0500025/2021004-01	NCV	Open/Closed	Failure to Prescribe Instructions or Procedures for ITAAC activities that Affect Quality
0500025/2021004-02	NCV	Open/Closed	Failure to Follow Procedure 3-GEN-ITPP-517
0500025/2021004-03	FIN	Open/Closed	Failure to Analyze Target Sets in Accordance with Procedures

LIST OF DOCUMENTS REVIEWED

Section 1A01

B-GEN-ITPCI-039-F117, RCS-PL-V001A Component Test, Revision (Rev.) 1.2
WO 1241530
B-GEN-ITPCI-039-F118, RCS-PL-V001B Component Test, Rev. 1.2
WO 1241531
B-GEN-ITPCI-039-F119, RCS-PL-V002A Component Test, Rev. 1.2
WO 1241532
B-GEN-ITPCI-039-F120, RCS-PL-V002B Component Test, Rev. 1.2
WO 1241533
B-GEN-ITPCI-039-F121, RCS-PL-V003A Component Test, Rev. 1.2
WO 1241534
B-GEN-ITPCI-039-F122, RCS-PL-V003B Component Test, Rev. 1.2
WO 1241535
B-GEN-ITPCI-039-F155, RCS-PL-V011A Component Test, Rev. 1.2
WO 1241536
B-GEN-ITPCI-039-F156, RCS-PL-V011B Component Test, Rev. 1.2
WO 1241537
B-GEN-ITPCI-039-F157, RCS-PL-V012A Component Test, Rev. 1.2
WO 1241538
B-GEN-ITPCI-039-F158, RCS-PL-V012B Component Test, Rev. 1.2
WO 1241539
B-GEN-ITPCI-039-F159, RCS-PL-V013A Component Test, Rev. 1.2
WO 1241540
B-GEN-ITPCI-039-F160, RCS-PL-V013B Component Test, Rev. 1.2
WO 1241541
B-GEN-ITPCE-039-F166, RCS-PL-V150B Component Test, Rev. 1
WO 1109868
B-GEN-ITPCE-039-F167, RCS-PL-V150D Component Test, Rev. 1
WO 1109868

Section 1A02

B-GEN-ITPCI-039-F169, RNS-PL-V001A Component Test, Rev. 1.2
WO 1241546
B-GEN-ITPCI-039-F236, VFS-PL-V009-S1 Component Test, Rev. 1.2
WO 1109906
B-GEN-ITPCI-039-F181, SFS-PL-V038 Component Test, Rev. 1.1
WO 1109872
WO 1241555

Section 1A03

ND-20-1406, ITAAC Closure Notification on Completion of ITAAC C.2.6.09.05a [Index Number 664], December 21, 2020

Section 1A04

90014-C Alarm Station Operations, Rev. 21
90200-C Security Seven Day Vital Area Portal Inspections, Rev. 36
90202-C Testing Explosive Detector Units, Rev. 19
90203-C Metal Detector Testing, Rev. 18

90204-C X-Ray Equipment Test Procedure, Rev. 16
NMP-SE-012 Safety/Security Interface, Rev. 5
NMP-SE-021 Security Search Process, Rev. 9
Fiber SenSys Walls and Masonry Structures Manual
CEIA Walk-Through Metal Detectors Use and maintenance Manual
Entry Scan 4 User's Manual
Smith Detection Conventional HI-Scan X-Ray Units Operating Instruction Manual

Section 1A05

APP-VAS-MD-659, Auxiliary Building Area 5 Elevation 153'0" VAS Duct ISO View, Rev. 9
APP-MD03-V2-850003, DFDAF-330 Damper Schedule, Rev. 15
APP-MD03-V2-850006, Fire Damper Grating Assembly, Rev. 1
APP-AB01-AB-010, Blockouts and Barriers (Penetrations, Seals and Fire Stops) Details Sheet 10, Rev. 4
APP-AB01-AB-012, Blockouts and Barriers (Penetrations, Seals and Fire Stops) Details Sheet 12, Rev. 0
Engineering & Design Coordination Report No. APP-FSAR-GEF-061, Addition of AS04 Specialty Device Detail to HVAC, Rev. 0
Engineering & Design Coordination Report No. APP-SES-GEF-031, Updates to Barrier Matrix, Rev. 0
APP-AS21-A1-001, AP1000 Security Barrier Design Requirements, Rev. 1
APP-GW-MD-103, HVAC Details Sheet 1, Rev. 1

Section 1P01

3-GEN-ITPP-517, Precore Hot Functional Test Procedure, Rev. 4.1
NMP-AP-003, Procedure and Work Instruction Use and Adherence, Rev. 6.1
Operator Logs, 05/22/2021
B-GEN-ITPA-004, Conduct of Test, Rev. 22
NMP-OS-007-001, Conduct of Operations Standards and Expectations, Rev. 18

Section 1P02

3-PMS-OTS-17-002, RCS RTD Time Response Testing, Rev. 0

Section 3T01

3-RCS-ITPP-506, Reactor Coolant Pump and Reactor Coolant Flow Precore Hot Function, Rev. 3.0.
3-GEN-ITPP-509, Reactor Coolant System Dynamic Effects and Vibration Testing, Rev. 2.0
3-GEN-ITPP-517, Precore Hot Functional Test Procedure, Rev. 5.0

Section 3T02

3-RCS-ITPP-506, Reactor Coolant Pump and Reactor Coolant Flow Precore Hot Function, Rev. 3.0.
3-GEN-ITPP-517, Precore Hot Functional Test Procedure, Rev. 5.0

Section 3T03

B-GEN-ITPCI-039-F026, ECS-ES-32 Component Test, Revision 1.1
B-GEN-ITPCI-039-F027, ECS-ES-41 Component Test, Revision 1.0
B-GEN-ITPCI-039-F028, ECS-ES-42 Component Test, Revision 1.0
B-GEN-ITPCI-039-F032, ECS-ES-62 Component Test, Revision 1.1

SV3-ECS-T0W-1241524 PMS CIM Component Retest ECS-ES-32
SV3-ECS-T0W-1241525 PMS-CIM Component Retest ECS-ES-62
SV3-ECS-T0W-1109892 PMS CIM Component Test for ECS Components (ECS-ES-41 &42)
ND-19-0717 Letter, Resubmittal of Notice of Uncompleted ITAAC 225-days Prior to Initial Fuel
Load Item 2.1.02.13b [Index Number 641], 05/2021
SV3-RCS-ITR-800064 Final ITAAC Technical Report, 05/2021
CR50088839
CR50088865
SV3-ECS-T0W-1241525 Signature log
SV3-ECS-T0W-1241525 Test Deficiency Report
SV3-ECS-T0W-1241524 Test Narrative Log
SV3-ECS-T0W-1241524 Test Deficiency TDR_CR Log
SV3-ECS-T0W-1241524 Test Deficiency Report
SV3-ECS-T0W-1241525 Test Narrative Log
SV3-ECS-T0W-1109892 Test Deficiency Report
SV3-ECS-T0W-1241525 Test Deficiency TDR_CR Log
SV3-ECS-T0W-1109892 Signature log
SV3-ECS-T0W-1109892 Test Deficiency TDR_CR Log
SV3-ECS-T0W-1241524 Signature log
SV3-ECS-T0W-1109892 Test Narrative Log
SV3-PMS-J1-105 RCP Trip Logic
SV3-PMS-J1-112 CMT Logic Diagram
PMS Mimic

Section 3T04

WO 1109906, PMS CIM Component Test - VFS-V004-SI and VFS-V009-SI
B-GEN-ITPCI-039-F244, WLS-PL-V057-S1 Component Test, Rev. 1.0
WO 1050043

Section 3T05

B-GEN-ITPCI-039-F079, PXS-PL-V108A-S1 Component Test, Rev. 1.0
3-PXS-OTS-10-001, Passive Core Cooling System Valve Stroke Test, Rev. 0
WO 1109879
B-GEN-ITPCI-039-F116, PXS-PL-V130B-S1 Component Test, Rev. 1.1
3-GEN-OTS-10-004, Division D Quarterly Valve Stroke Test Rev. 0
WO 1109911

Section 3P01

Application Reports

Westinghouse SV0-PV01-VPR-132002, Vogtle Units 3 and 4 PV01 QME-1 Application Report
for Datasheet APP-PV01-Z0D-132, Rev. 0
Westinghouse SV0-PV01-VPR-208002, Application Report for Valves for Datasheet APP-PV01-
Z0D-208 for Vogtle Units 3 and 4, Rev. 0

Equipment Qualification

Flowserve RAL-7631, Equipment Qualification Plan QME-1-2007, Rev. 4
Flowserve RAL-7668, QME-1 Functional Qualification Test Procedure A/D Flexwedge Gate
Valves Size 3-14, Class 150-1530, Edward Globe Valves Size 3-8, Class 1530-1850, Rev. 4

Westinghouse APP-PV01-VBR-011, Equipment Qualification Summary Report for Flowserve Flex Wedge Gate Valves with Limitorque Motor Operators for Use in the AP1000 Plant, Rev. 2

Westinghouse APP-PV01-VBR-013, Equipment Qualification Summary Report for Flowserve Globe Stop Valves with Limitorque Motor Operators for Use in the AP1000 Plant,” dated Rev. 2

Westinghouse APP-PV01-VBR-015, Equipment Qualification Summary Report for IMI CCI Motor Operated 12-inch DRAG Globe Valves for Use in the AP1000 Plant, Rev. 0

Westinghouse APP-PV01-VPR-001 (RAL-7990), Functional Qualification Summary & Analysis Report per ASME QME-1-2007, Rev. 0

Westinghouse APP-PV01-VPR-005 (RAL-7987), QME-1 Functional Qualification Report per ASME QME-1-2007 for Flowserve Size 3 Figure B2016(CF3M)JMTY with SMB-1-25, Rev. 0

Westinghouse APP-PV01-VPR-006 (RAL-7988), QME-1 Functional Qualification Report per QME-1-2007 for Flowserve Size 4 Figure BD2026(CF3M)JMTY with SMB-00-10, Rev. 0

Westinghouse APP-PV01-VPR-007 (RAL-7989), QME-1 Functional Qualification Report per ASME QME-1-2007 for Flowserve Size 8 Figure BD2026(CF3M)JMTY with SMB-0-5, Rev. 0

Westinghouse APP-PV01-VPR-008 (RAL-7991), Functional Qualification Summary and Analysis Report per ASME QME-1-2007 for Edward Heritage T-Pattern Globe Valves, dated Rev. 1

Westinghouse APP-PV01-VPR-009 (RAL-7889), AP1000 PV01 Correlation of QME-1 Test Results with Calculation Methods for Determining Valve Assembly Primary Mode Natural Frequencies, Rev. 0

Westinghouse APP-PV01-VPR-010 (RAL-70259), Supplemental Functional Test Report for Piston Ring Configuration on a Flowserve Size 8 Figure BD2026(CF3M)JMTY with SMB-0-5, Rev. 0

Westinghouse APP-PV95-VPR-101, Equipment Qualification Test Report for the Limitorque Valve Actuators for Use in the AP1000 Plant, Rev. 0

Set Point Data Sheets (SPDS)

SPDS SV0-PV01-T9-103, Revision 2, “Set Point Data Sheet (SPDS) for Valves Built to PV01-Z0D-103,” dated 3-30-2021, for RCS-PL-V011A and B

SPDS SV0-PV01-T9-113, Revision 1, “Set Point Data Sheet (SPDS) for Valves Built to PV01-Z0D-113,” dated 9-17-2020, for RCS-PL-V012A/B and V013A/B

SPDS SV0-PV01-T9-115, Revision 0, “Set Point Data Sheet (SPDS) for Valves Built to PV01-Z0D-115,” dated 11-5-2018, for PXS-PL-V117A/B

SPDS SV0-PV01-T9-116, Revision 0, “Set Point Data Sheet (SPDS) for Valves Built to PV01-Z0D-116,” dated 8-8-2018, for RNS-PL-V001A/B and V002A/B

Section 3P02

Condition Report 50031958, dated October 17, 2019

Condition Report 50031962 dated October 17, 2019

Condition Report 50098499, dated July 1, 2021

Technical Evaluations Quality Record # 60027420, dated July 1, 2021

Technical Evaluations Quality Record # 60027422, dated July 1, 2021

Technical Evaluations Quality Record # 60027424, dated July 1, 2021

ND-AD-VNP-029, “Transition to Operations User’s Guide,” dated March 26, 2021

3-EOP-E-0, “Reactor Trip of Safeguards Actuation,” Version 1, dated March 19, 2021

NMP-SE-015, “Target Set Identification, Development, and Maintenance,” Version 8.0, dated February 20, 2021

NMP-SE-012, "Safety/Security Interface," Version 5.0, dated December 15, 2020
B-GEN-CSEC-003- Attachment 4, Cyber Security Assessment Plan, Version 7

LIST OF ACRONYMS

CAP	corrective action program
CFR	Code of Federal Regulations
CR	condition report
CVS	chemical and volume control system
DC	direct current
DCO	Division of Construction Oversight
DRS	Division of Reactor Safety
FWG	flexible wedge gate
HVAC	heating, ventilation, and cooling
ICN	ITAAC Closure Notification
IMC	inspection manual chapter
IP	inspection procedure
IR	inspection report
ITAAC	inspections, tests, analysis, and acceptance criteria
MOV	motor operated valve
NCV	Noncited Violation
NRC	Nuclear Regulatory Commission
PMS	protection and safety monitoring system
PXS	passive core cooling system
QA	quality assurance
RCP	reactor coolant pump
RCS	reactor coolant system
Rev.	Revision
RNS	residual heat removal system
SFS	spend fuel pool system
SGS	steam generator system
SL	severity level
SPDS	set point data sheet
SSC	structures, systems, and components
TEDEV	Thermal Expansion Dynamic Effects and Vibration
UFSAR	Updated Final Safety Analysis Report

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
30	2.1.02.08b	8.b) The RCPs have a rotating inertia to provide RCS flow coastdown on loss of power to the pumps.	A test will be performed to determine the pump flow coastdown curve.	The pump flow coastdown will provide RCS flows greater than or equal to the flow shown in Figure 2.1.2-2, "Flow Transient for Four Cold Legs in Operation, Four Pumps Coasting Down."
41	2.1.02.09a	9.a) The RCS provides circulation of coolant to remove heat from the core.	Testing and analysis to measure RCS flow with four reactor coolant pumps operating at no-load RCS pressure and temperature conditions will be performed. Analyses will be performed to convert the measured pre-fuel load flow to post-fuel load flow with 10-percent steam generator tube plugging.	The calculated post-fuel load RCS flow rate is > 301,670 gpm.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
47	2.1.02.11a.ii	<p>10. Safety-related displays identified in Table 2.1.2-1 can be retrieved in the MCR.</p> <p>11.a) Controls exist in the MCR to cause the remotely operated valves identified in Table 2.1.2-1 to perform active functions.</p> <p>11.b) The valves identified in Table 2.1.2-1 as having PMS control perform an active safety function after receiving a signal from the PMS.</p> <p>12.b) After loss of motive power, the remotely operated valves identified in Table 2.1.2-1 assume the indicated loss of motive power position.</p>	<p>Inspection will be performed for retrievability of the safety-related displays in the MCR.</p> <p>ii) Stroke testing will be performed on the other remotely operated valves listed in Table 2.1.2-1 using controls in the MCR.</p> <p>ii) Testing will be performed on the other remotely operated valves identified in Table 2.1.2-1 using real or simulated signals into the PMS.</p> <p>iii) Testing will be performed to demonstrate that remotely operated RCS valves RCS-V001A/B, V002A/B, V003A/B, V011A/B, V012A/B, V013A/B open within the required response times.</p> <p>Testing of the remotely operated valves will be performed under the conditions of loss of motive power.</p>	<p>Safety-related displays identified in Table 2.1.2-1 can be retrieved in the MCR.</p> <p>ii) Controls in the MCR operate to cause the remotely operated valves (other than squib valves) to perform active functions.</p> <p>ii) The other remotely operated valves identified in Table 2.1.2-1 as having PMS control perform the active function identified in the table after receiving a signal from PMS.</p> <p>iii) These valves open within the following times after receipt of an actuation signal: V001A/B < 40 sec V002A/B, V003A/B < 100 sec V011A/B < 30 sec V012A/B, V013A/B < 60 sec</p> <p>Upon loss of motive power, each remotely operated valve identified in Table 2.1.2-1 assumes the indicated loss of motive power position.</p>
64	2.1.02.13b	13.b) The RCPs trip after receiving a signal from the PMS.	Testing will be performed using real or simulated signals into the PMS.	The RCPs trip after receiving a signal from the PMS.

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
110	2.2.01.09	<p>9. Safety-related displays identified in Table 2.2.1-1 can be retrieved in the MCR.</p> <p>10.a) Controls exist in the MCR to cause those remotely operated valves identified in Table 2.2.1-1 to perform active functions.</p> <p>10.b) The valves identified in Table 2.2.1-1 as having PMS control perform an active safety function after receiving a signal from the PMS.</p>	<p>Inspection will be performed for retrievability of the safety-related displays in the MCR. Stroke testing will be performed on remotely operated valves identified in Table 2.2.1-1 using the controls in the MCR. Testing will be performed on remotely operated valves listed in Table 2.2.1-1 using real or simulated signals into the PMS.</p>	<p>Safety-related displays identified in Table 2.2.1-1 can be retrieved in the MCR. Controls in the MCR operate to cause remotely operated valves identified in Table 2.2.1-1 to perform active safety functions. The remotely operated valves identified in Table 2.2.1-1 as having PMS control perform the active function identified in the table after receiving a signal from PMS.</p>
118	2.2.01.11b	<p>11.b) After loss of motive power, the remotely operated valves identified in Table 2.2.1-1 assume the indicated loss of motive power position.</p>	<p>Testing of the remotely operated valves will be performed under the conditions of loss of motive power.</p>	<p>After loss of motive power, each remotely operated valve identified in Table 2.2.1-1 assumes the indicated loss of motive power position.</p>

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
206	2.2.03.10	<p>10. Safety-related displays of the parameters identified in Table 2.2.3-1 can be retrieved in the MCR. 11.a) Controls exist in the MCR to cause the remotely operated valves identified in Table 2.2.3-1 to perform their active function(s). 11.b) The valves identified in Table 2.2.3-1 as having PMS control perform their active function after receiving a signal from the PMS. 12.b) After loss of motive power, the remotely operated valves identified in Table 2.2.3-1 assume the indicated loss of motive power position. 13. Displays of the parameters identified in Table 2.2.3-3 can be retrieved in the MCR.</p>	<p>Inspection will be performed for the retrievability of the safety-related displays in the MCR. ii) Stroke testing will be performed on remotely operated valves other than squib valves identified in Table 2.2.3-1 using the controls in the MCR. ii) Testing will be performed on the remotely operated valves other than squib valves identified in Table 2.2.3-1 using real or simulated signals into the PMS. iii) Testing will be performed to demonstrate that remotely operated PXS isolation valves PXS-V014A/B, V015A/B, V108A/B open within the required response times. Testing of the remotely operated valves will be performed under the conditions of loss of motive power. Inspection will be performed for retrievability of the displays identified in Table 2.2.3-3 in the MCR.</p>	<p>Safety-related displays identified in Table 2.2.3-1 can be retrieved in the MCR. ii) Controls in the MCR operate to cause remotely operated valves other than squib valves to perform their active functions. ii) Remotely operated valves other than squib valves perform the active function identified in the table after a signal is input to the PMS. iii) These valves open within 20 seconds after receipt of an actuation signal. After loss of motive power, each remotely operated valve identified in Table 2.2.3-1 assumes the indicated loss of motive power position. Displays identified in Table 2.2.3-3 can be retrieved in the MCR.</p>

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
664	C.2.6.09.05a	5. Access control points are established to: a) control personnel and vehicle access into the protected area. b) detect firearms, explosives, and incendiary devices at the protected area personnel access points.	Tests, inspections, or combination of tests and inspections of installed systems and equipment at the access control points to the protected area will be performed. Tests, inspections, or combination of tests and inspections of installed systems and equipment at the access control points to the protected area will be performed.	The access control points for the protected area: a) are configured to control personnel and vehicle access. b) include detection equipment that is capable of detecting firearms, incendiary devices, and explosives at the protected area personnel access points.
668	C.2.6.09.08a	8.a) Penetrations through the protected area barrier are secured and monitored. 8.b) Unattended openings (such as underground pathways) that intersect the protected area boundary or vital area boundary will be protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation.	Inspections will be performed of penetrations through the protected area barrier. Inspections will be performed of unattended openings that intersect the protected area boundary or vital area boundary.	Penetrations and openings through the protected area barrier are secured and monitored. Unattended openings (such as underground pathways) that intersect the protected area boundary or vital area boundary are protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation.